IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Inventors ..... Charlie Steinmetz et al.
Group Art Unit 2853
Examiner ..... Laura Martin
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Title: Printing Fluid Container

APPEAL BRIEF

1. REAL PARTY IN INTEREST.

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holding, LLC.

2. RELATED APPEALS AND INTERFERENCES.

There are no other appeals or interferences known to Appellants, Appellants' legal representative or the Assignee which will affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

3. STATUS OF CLAIMS.

Claims 1, 3, 7-12, 15-34 and 38-41 are pending. Claims 2, 4-6, 13-14 and 35-37 have been canceled. The rejections of all pending claims, Claims 1, 3, 7-12, 15-34 and 38-41, are appealed.

4. STATUS OF AMENDMENTS.

No amendments were filed after the final action.

5. SUMMARY OF CLAIMED SUBJECT MATTER.

The following is provided pursuant to Rule 41.37(c)(1)(v) which requires "a concise explanation of the subject matter defined in each of the independent claims

involved in the appeal, which shall refer to the specification by page and line number, and to the drawings if any, by reference characters." Nothing in this Section 5 should be construed to limit the scope of any of the claims, which are enumerated in full in Appendix I to this Appeal Brief.

Independent Claim 1. Claim 1 is directed to an off-axis printing fluid container that includes dual mode fluid and air interfaces recessed into the leading surface of the container. The printing fluid interface is configured to move printing fluid into and out of the printing fluid reservoir. The air interface is configured to move air into and out of the printing fluid reservoir as printing fluid is moved into and out of the reservoir. Embodiments of a printing fluid container with recessed, dual mode fluid and air interfaces are shown in Fig. 5 (interfaces 156 and 158 on container 120) and Fig. 30 (interfaces 302 and 304 on container 300) and described in the Specification at page 20, lines 3-15 and page 29, lines 3-23, respectively.

Independent Claim 12. Claim 12 is directed to an off-axis printing fluid container for holding a mixture of ink and air. The container of Claim 12 includes dual mode fluid and air interfaces recessed into a leading surface of the container configured for lateral insertion into a printing system. The printing fluid interface is configured to output printing fluid from the printing fluid reservoir during a first mode of operation and to input printing fluid into the reservoir during a second mode of operation. The air interface is configured to regulate pressure within the printing fluid reservoir by inputting air into the reservoir during the first mode of operation and by outputting air from the reservoir as the printing fluid is input into the reservoir during the second mode of operation. Embodiments of a printing fluid container with recessed, dual mode fluid and air interfaces are shown in Fig. 5 (interfaces 156 and 158 on container 120) and Fig. 30 (interfaces 302 and 304 on container 300) and described in the Specification at page 20, lines 3-15 and page 29, lines 3-23, respectively. Lateral insertion is shown in Figs. 14-17 which are described in the Specification at page 21, lines 6-17 and page 22, lines 11-32. Lateral insertion is also referenced in the Specification at page 4, lines 26-32, page 7, lines 31-32, page 25, lines 5-11 and page 29, lines 5-7.

Independent Claim 33. Claim 33 is directed to an off-axis printing fluid container having a reservoir configured to hold a mixture of ink and air. The container of Claim 33

includes dual mode, ball and septum fluid and air interfaces on an upright leading surface of the reservoir. The printing fluid and air interfaces are configured to block input and output of printing fluid and air until the printing fluid container is laterally installed into a printing system. Embodiments of a printing fluid container such as that recited in Claim 33 are shown in Fig. 5 (interfaces 156 and 158 on container 120) and Fig. 30 (interfaces 302 and 304 on container 300) and described in the Specification at page 20, lines 3-15 and page 29, lines 3-23, respectively. Lateral installation is shown in Figs. 14-17 which are described in the Specification at page 21, lines 6-17 and page 22, lines 11-32. Lateral installation is also referenced in the Specification at page 4, lines 26-32, page 7, lines 31-32, page 25, lines 5-11 and page 29, lines 5-7.

Independent Claim 38. Claim 38 is directed to a method of supplying printing fluid using dual mode printing fluid and air interfaces. The method of Claim 38 includes: storing a free volume of printing fluid and air mixed together in a reservoir having an air interface and a printing fluid interface; allowing printing fluid to exit the reservoir through the printing fluid interface and allowing air to enter the reservoir through the air interface during a first mode of operation; and allowing printing fluid to return to the reservoir through the printing fluid interface and allowing air to exit the reservoir through the air interface as the printing fluid is returned to the reservoir through the printing fluid interface during a second mode of operation. E.g., Fig. 5 (operation of interfaces 156 and 158 on container 120) and Fig. 30 (operation of interfaces 302 and 304 on container 300) and Specification page 20, lines 3-15 and page 29, lines 3-23.

6. GROUNDS OF REJECTION TO BE REVIEWED.

1. Claims 1, 3, 7, 12, 15, 18, 19, 27, 28, 30, 31 and 38-40 stand rejected under Section 103 as being obvious over Hatasa 20020122104 in view of Klaus 5631681.

2. Claims 8, 20 and 41 stand rejected under Section 103 as being obvious over Hatasa, Klaus and Koizumi 20030025773.

3. Claims 9-11, 26, 29 and 32-34 stand rejected under Section 103 as being obvious over Hatasa, Klaus and Barinaga 5721576.

4. Claims 16, 17 and 21-25 stand rejected under Section 103 as being obvious over Hatasa, Klaus and Childers 6116723.

5. Claims 33 and 34 stand rejected under Section 103 as being obvious over Koizumi, Klaus and Barinaga.

6. Claims 38-41 stand rejected under Section 103 as being obvious over Koizumi and Klaus.

7. ARGUMENT.

GROUND NO. 1

Claims 1, 3, 7, 12, 15, 18, 19, 27, 28, 30, 31 and 38-40 stand rejected under Section 103 as being obvious over Hatasa 20020122104 in view of Klaus 5631681.

Claims 1, 3, 7, 12, 15, 18, 19, 27, 28, 30, 31 and 38-40 stand rejected under Section 103 as being obvious over Hatasa 20020122104 in view of Klaus 5631681.

In evaluating the legal question of obviousness, the Examiner must, as a matter of fact, determine the scope and content of the prior art and then ascertain the differences between the claimed subject matter and the prior art. Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966). The Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. MPEP 2142.

Dual Operating Modes And Lateral Input And Insertion

The printing fluid container of Claim 1 includes (1) an off-axis printing fluid reservoir configured to hold a free volume of printing fluid and air mixed together, (2) a printing fluid interface configured to move printing fluid into and out of the fluid reservoir, and (3) an air interface configured to move air into and out of the fluid reservoir as the fluid is moved into and out of the reservoir. Claims 12 and 38 recite similar limitations.

In Claim 3 depending from Claim 1, the leading surface of the reservoir is an upright surface configured for lateral insertion into a printing system.

In Claim 7 depending from Claim 1, the printing fluid interface is configured to laterally input and output the printing fluid. Claim 19 depending from Claim 12 recites a similar limitation.

In rejecting Claims 1, 12 and 38, the Examiner asserts that Klaus teaches a printing fluid interface configured to move printing fluid into and out of the fluid reservoir, citing Klaus Figs. 2 and 3 and column 4, lines 40-54. Final Office Action, page 4. Klaus column 4, lines 40-54 is set forth below.

The top side **51** of cartridge **20**, as viewed in FIGS. **2** and **3**, includes an air vent opening **52** and an ink refill port **54**, both of which are openings which extend through the top wall of container enclosure **44**. Vent **52** allows air to enter and exit reservoir **50** as ink is added or drained from the cartridge. Refill port **54** is preferably a partially plugged circular opening, as shown in FIG. **4**, or can alternatively be a one-way valve. The refill port allows ink to flow into reservoir **50** from a refill coupling described in detail below. A resilient sealing ring **56** extends around refill port **54** on top wall **51**. Sealing ring **56** mates with the refill coupling and also helps confine and direct any ink delivered by the replenishing system into port **54**.

It is clear from this passage in Klaus that refill port 54 is configured as a one way interface -- there is no teaching or even any suggestion that refill port 54 is configured to move ink out of reservoir 50. Klaus teaches only that refill port 54 "allows ink to flow into reservoir 50 from a refill coupling describe in detail below." Klaus column 4, lines 48-49. There is no indication ink is at anytime withdrawn from ink cartridge reservoir 50 through refill port 54.

Appellants respectfully submit that the Examiner has misinterpreted Klaus in this regard and, therefore, failed to establish a prima facie case of obviousness as to Claims 1, 12 and 38 and their respective dependent claims.

With regard to the further limitation of Fig. 3, the Examiner asserts that "element 4 is laterally inserted into printhead 3" in Fig. 1 of Hatasa. Final Office Action, page 2. Fig. 1 in Hatasa is a "schematic drawing" and, as such, says nothing at all about the structural configuration of the parts. Hatasa paragraphs 0052 and 0108. This is particularly true for liquid supplying tube 4 and ink jet head 3 for which no apparent effort has been made in Fig. 1 to depict the actual structures or the structural interconnection between those parts. (As opposed to liquid container 2 which appears to be depicted with some structural components, not purely schematically.)

In any event, Claim 3 recites that the leading surface of the reservoir is an upright surface configured for lateral insertion into a printing system. Liquid supplying tube 4 in Hatasa is not a leading surface of liquid container 2. Thus, Hatasa does not teach or suggest the further limitation of Claim 3 even if it is assumed tube 4 in Hatasa is laterally inserted into head 3.

Appellants respectfully submit that the Examiner has misinterpreted Hatasa in this regard and, therefore, failed to establish a prima facie case of obviousness as to the further limitation of Claim 3.

With regard to the further limitation of Claims 7 and 19, the Examiner asserts that Hatasa teaches that "the printing-fluid interface is configured to laterally output printing fluid (figure 1, element 4 into element 3)." Final Office Action, page 3. Fig. 1 in Hatasa is a "schematic drawing" and, as such, says nothing at all about the structural configuration of the parts. This is particularly true for liquid supplying tube 4 and ink jet head 3 for which no apparent effort has been made in Fig. 1 to depict the actual structures or the structural interconnection between those parts. (As opposed to liquid container 2 which appears to be depicted with some structural components, not purely schematically.)

In any event, Claim 7 is directed to a container that includes "a printing fluid interface recessed into the leading surface [of the reservoir] and extending into the reservoir and configured to move printing fluid into and out of the printing-fluid reservoir." (As recited in Claim 1 from which Claim 7 depends.) That is to say, the fluid interface configured to laterally input and output the printing fluid must be recessed into the leading surface of the reservoir and extend into the reservoir. Thus, even if it is assumed "schematic drawing" Fig. 1 in Hatasa shows actual structures, tube 4 clearly is not recessed into any part of container 2 nor does it extend in to container 2.

Appellants respectfully submit that the Examiner has misinterpreted Hatasa in this regard and, therefore, failed to establish a prima facie case of obviousness as to the further limitation of Claims 7 and 19.

Allowing Air To Exit When Returning Fluid To The Reservoir

Claim 38 recites allowing printing fluid to return to the reservoir through the printing fluid interface and allowing air to exit the reservoir through the air interface as the printing fluid is returned to the reservoir through the printing fluid interface.

Klaus teaches venting the ink container while the container is refilled with ink:

> The top side 51 of cartridge 20 ... includes an air vent opening 52 and an ink refill port 54, both of which are openings which extend through the top wall of container enclosure 44. Vent 52 allows air to enter and exit reservoir 50 as ink is added or drained from the cartridge. ... The refill port

allows ink to flow into reservoir 50 from a refill coupling described in detail below. Klaus column 4, lines 41-49.

Klaus does not teach or suggest a printing fluid interface through which printing fluid is "returned" to the reservoir.

Note that Claim 38 recites:

allowing printing fluid to exit the reservoir through the printing fluid interface;

allowing printing fluid to return to the reservoir through the printing fluid interface; and

allowing air to exit the reservoir through the air interface as the printing fluid is ***returned*** to the reservoir through the printing fluid interface. (emphasis added)

It is this combination of acts that further distinguishes over Hatasa and Klaus. Klaus may teach allowing air to enter a reservoir while the reservoir is being filled with ink from outside the printer, but it does teach or even contemplate recirculating ink to and from the reservoir. Hence, combining Hatasa and Klaus does not, indeed cannot, teach all of the limitations of Claim 38.

For this additional reason, Appellants respectfully submit that the Examiner has misinterpreted Klaus and, therefore, failed to establish a prima facie case of obviousness as to Claim 38 and its dependent claims based on the combination of Hatasa and Klaus.

GROUND NO. 2

Claims 8, 20 and 41 stand rejected under Section 103 as being obvious over Hatasa, Klaus and Koizumi 20030025773.

Claims 8, 20 and 41 stand rejected under Section 103 as being obvious over Hatasa, Klaus and Koizumi 20030025773.

The rejections of Claims 8, 20 and 41, which depend from Claims 1, 12 and 38, respectively, are based on the assertion that the base claim is obvious over Hatasa in view of Klaus. As detailed above, independent Claims 1, 12 and 38 distinguish patentably over the combination of Hatasa and Klaus. For these same reasons, therefore, dependent Claims 8, 20 and 41 distinguish over the combination of Hatasa, Klaus and Koizumi.

Specifically with regard to the further limitation of Claim 8 depending from Claim 1, the Examiner asserts that Koizumi teaches "the air interface configured to laterally input air (figure 1, element 26, there is a lateral portion of the air supply line)." Final Office Action, page 5. The structural embodiments of Koizumi's "ink discharge recording apparatus" are shown schematically in Fig. 1. Koizumi paragraphs 0026 and 0036. The actual structures are nowhere depicted in Koizumi. Thus, there is really no part of atmosphere releasing tube 26 that can reasonably be considered to be oriented laterally.

In any event, Claim 8 is directed to a container that includes "an air-interface recessed into the leading surface [of the reservoir] and extending into the reservoir and configured to move air into and out of the printing-fluid reservoir as the printing-fluid is moved into and out of the reservoir." (As recited in Claim 1 from which Claim 8 depends.) That is to say, the air interface configured to laterally input and output the air must be recessed into the leading surface of the reservoir and extend into the reservoir. Thus, even if it is assumed the schematic Fig. 1 in Koizumi shows actual structures, tube 26 clearly is not recessed into any part of ink tank 22. (Note that Claim 1 recites that the air interface is *both* recessed into the leading surface of the reservoir and extends into the reservoir." The plain fact is that the components of the ink discharge recording apparatus shown schematically in Koizumi Fig. 1 don't suggest anything at all about the specific structural configuration recited in Claim 8.

The same analysis applies to Claim 20 depending from Claim 12.

Applicants respectfully submit that the Examiner has misinterpreted Koizumi in this regard and, therefore, failed to establish a prima facie case of obviousness as to the further limitation of Claims 8 and 20.

GROUND NO. 3

Claims 9-11, 26, 29 and 32-34 stand rejected under Section 103 as being obvious over Hatasa, Klaus and Barinaga 5721576.

Claims 9-11, 26, 29 and 32-34 stand rejected under Section 103 as being obvious over Hatasa, Klaus and Barinaga 5721576.

The rejections of Claims 9-11 and 26, 29 and 32, which depend from Claims 1 and 12, respectively, are based on the assertion that Claims 1 and 12 are obvious over

Hatasa in view of Klaus. As detailed above under Ground No. 1, independent Claims 1 and 12 distinguish patentably over the combination of Hatasa and Klaus. For these same reasons, therefore, dependent Claims 9-11 and 26, 29 and 32 distinguish over the combination of Hatasa, Klaus and Barinaga.

The printing fluid container of Claim 33 includes (1) an off-axis printing fluid reservoir configured to hold a mixture of printing fluid and air, (2) a printing fluid interface on an upright leading surface of the reservoir, and (3) an air interface vertically aligned above the printing fluid interface on the upright leading surface of the reservoir. The printing fluid interface is configured to output printing fluid from the reservoir during a first mode of operation and to input printing fluid into the reservoir during a second mode of operation. The air interface is configured to regulate pressure within the reservoir by inputting air into the reservoir during the first mode of operation and by outputting air from the reservoir as printing fluid is input into the reservoir during the second mode of operation. The fluid and air interfaces are configured to block input and output of printing fluid and air until the container is laterally installed into a printing system.

With regard to the dual operating mode limitation of Claim 33 (moving fluid and air into and out of the reservoir), as with Claims 1 and 12, the Examiner asserts that Klaus teaches a printing fluid interface configured to move printing fluid into and out of the fluid reservoir, citing Klaus Figs. 2 and 3 and column 4, lines 40-54. Final Office Action, page 11. As detailed above under Ground No. 1 for Claims 1 and 12, this assertion is not correct.

With regard to the upright leading surface and lateral installation limitations of Claim 33, as detailed above under Ground No. 1 for Claim 3, Hatasa does not teach these limitations. The Examiner's assertion to the contrary is not correct.

For these same reasons, therefore, the Examiner has also failed to establish a prima facie case of obviousness as to Claim 33 and Claim 34, depending from Claim 33.

GROUND NO. 4

Claims 16, 17 and 21-25 stand rejected under Section 103 as being obvious over Hatasa, Klaus and Childers 6116723.

Claims 16, 17 and 21-25 stand rejected under Section 103 as being obvious over Hatasa, Klaus and Childers 6116723.

The rejections of Claims 16, 17 and 21-25, which depend from Claim 12, respectively, are based on the assertion that Claim 12 is obvious over Hatasa in view of Klaus. As detailed above under Ground No. 1, independent Claim 12 distinguishes patentably over the combination of Hatasa and Klaus. For these same reasons, therefore, dependent Claims 16, 17 and 21-25 distinguish over the combination of Hatasa, Klaus and Childers.

GROUND NO. 5

Claims 33 and 34 stand rejected under Section 103 as being obvious over Koizumi, Klaus and Barinaga.

Claims 33 and 34 stand rejected under Section 103 as being obvious over Koizumi, Klaus and Barinaga. Barinaga is cited only for the proposition that a ball and septum assembly was known in the art. Thus, further reference to Barinaga is omitted.

The printing fluid container of Claim 33 includes (1) an off-axis printing fluid reservoir configured to hold a mixture of printing fluid and air, (2) a printing fluid interface on an upright leading surface of the reservoir, and (3) an air interface vertically aligned above the printing fluid interface on the upright leading surface of the reservoir. The printing fluid interface is configured to output printing fluid from the reservoir during a first mode of operation and to input printing fluid into the reservoir during a second mode of operation. The air interface is configured to regulate pressure within the reservoir by inputting air into the reservoir during the first mode of operation and by outputting air from the reservoir as printing fluid is input into the reservoir during the second mode of operation. The fluid and air interfaces are configured to block input and output of printing fluid and air until the container is laterally installed into a printing system.

In support of the rejection based on Koizumi and Klaus, with regard to the dual operating mode limitation of Claim 33 (moving fluid and air into and out of the reservoir), the Examiner again asserts that Klaus teaches a printing fluid interface configured to move printing fluid into and out of the fluid reservoir, citing Klaus Figs. 2 and 3 and column 4, lines 40-54. Final Office Action, page 9. As detailed above under Ground No. 1 for Claims 1 and 12, this assertion is not correct.

With regard to the upright leading surface and lateral installation limitations of Claim 33, as detailed above under Ground Nos. 1 and 2 for Claims 3 and 8, neither Hatasa nor Koizumi teach or suggest these limitations.

For these same reasons, therefore, the Examiner has also failed to establish a prima facie case of obviousness based on the combination of Koizumi and Klaus as to Claim 33 and Claim 34, depending from Claim 33.

GROUND NO. 6

Claims 38-41 stand rejected under Section 103 as being obvious over Koizumi and Klaus.

Claims 38-41 stand rejected under Section 103 as being obvious over Koizumi and Klaus.

Claim 38 recites allowing printing fluid to return to the reservoir through the printing fluid interface and allowing air to exit the reservoir through the air interface as the printing fluid is returned to the reservoir through the printing fluid interface.

Klaus teaches venting the ink container while the container is refilled with ink:

> The top side 51 of cartridge 20 ... includes an air vent opening 52 and an ink refill port 54, both of which are openings which extend through the top wall of container enclosure 44. Vent 52 allows air to enter and exit reservoir 50 as ink is added or drained from the cartridge. ... The refill port allows ink to flow into reservoir 50 from a refill coupling described in detail below. Klaus column 4, lines 41-49.

Klaus does not teach or suggest a print fluid interface through which printing fluid is "returned" to the reservoir.

Note that Claim 38 recites:

allowing printing fluid to exit the reservoir through the printing fluid interface;

allowing printing fluid to return to the reservoir through the printing fluid interface; and

allowing air to exit the reservoir through the air interface as the printing fluid is ***returned*** to the reservoir through the printing fluid interface. (emphasis added)

It is this combination of acts that distinguishes over Koizumi and Klaus. Klaus may teach allowing air to enter a reservoir while the reservoir is being filled with ink from outside the printer, but it does teach or even contemplate recirculating ink to and from the reservoir. Hence, combining Koizumi and Klaus does not, indeed cannot, teach all of the limitations of Claim 38.

The Examiner asserts in reply at page 13 of the Final Action that Claim 38 "does not specify whether ink has previously exited the reservoir or whether the ink is new being refilled into the ink reservoir." This assertion is not correct. As noted above, Claim 38 expressly recites "allowing air to exit the reservoir through the air interface as the printing fluid is ***returned*** to the reservoir through the printing fluid interface." (emphasis added) It is axiomatic that the fluid cannot return to the reservoir unless it has first exited the reservoir (as in the claimed act of allowing printing fluid to exit the reservoir).

Appellants respectfully submit that the Examiner has misinterpreted Claim 38 and the teachings of Koizumi and Klaus in this regard and, therefore, failed to establish a prima facie case of obviousness as to Claim 38 and its dependent claims based on the combination of Koizumi and Klaus.

Respectfully submitted,

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APPENDIX I -- CLAIMS INVOLVED IN THE APPEAL

1. (Previously Presented) A printing-fluid container, comprising:

an off-axis printing-fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein, the printing-fluid reservoir having a substantially planer leading surface;

a printing-fluid interface recessed into the leading surface and extending into the reservoir and configured to move printing fluid into and out of the printing-fluid reservoir; and

an air-interface recessed into the leading surface and extending into the reservoir and configured to move air into and out of the printing-fluid reservoir as the printing-fluid is moved into and out of the reservoir.

2. (Canceled)

3. (Previously Presented) The printing-fluid container of claim 1, wherein the leading surface of the printing-fluid reservoir is an upright surface configured for lateral insertion into a printing system.

4-6. (Canceled)

7. (Original) The printing-fluid container of claim 1, wherein the printing-fluid interface is configured to laterally input and output the printing fluid.

8. (Original) The printing-fluid container of claim 1, wherein the air-interface is configured to laterally input and output the air.

9. (Original) The printing-fluid container of claim 1, wherein the printing-fluid interface includes a ball and septum assembly.

10. (Original) The printing-fluid container of claim 1, wherein the air-interface includes a ball and septum assembly.

11. (Original) The printing fluid container of claim 1, wherein the printing-fluid interface and the air-interface are each respectively configured to conditionally block input and output of printing fluid and air unless engaged by a fluid connector.

12. (Previously Presented) A printing-fluid container, comprising:

an off-axis printing-fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein, the printing-fluid reservoir having a leading surface configured for lateral insertion into a printing system;

a printing-fluid interface recessed into the leading surface of the printing-fluid reservoir and extending into the reservoir, wherein the printing-fluid interface is configured to output printing fluid from the printing-fluid reservoir during a first mode of operation and is configured to input printing fluid into the printing-fluid reservoir during a second mode of operation; and

an air-interface recessed into the leading surface of the printing-fluid reservoir and extending into the reservoir, wherein the air-interface is configured to regulate pressure within the printing-fluid reservoir by inputting air into the printing-fluid reservoir during the first mode of operation and by outputting air from the printing-fluid reservoir as the printing fluid is input into the printing-fluid reservoir during the second mode of operation.

13-14. (Canceled)

15. (Previously Presented) The printing-fluid container of claim 12, wherein the leading surface has a substantially planar profile.

16. (Previously Presented) The printing-fluid container of claim 12, wherein the air-interface is above the printing-fluid interface on the leading surface of the printing-fluid reservoir.

17. (Previously Presented) The printing-fluid container of claim 16, wherein the air-interface is vertically aligned above the printing-fluid interface on the leading surface of the printing-fluid reservoir.

18. (Previously Presented) The printing-fluid container of claim 12, wherein a single structural piece forms the leading surface.

19. (Original) The printing-fluid container of claim 12, wherein the printing-fluid interface is configured to laterally input and output the printing fluid.

20. (Original) The printing-fluid container of claim 12, wherein the air-interface is configured to laterally input and output the air.

21. (Original) The printing-fluid container of claim 12, wherein the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure substantially equivalent to an ambient atmosphere pressure.

22. (Original) The printing-fluid container of claim 12, wherein the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure above an ambient atmosphere pressure.

23. (Original) The printing-fluid container of claim 12, wherein the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure below an ambient atmosphere pressure.

24. (Original) The printing-fluid container of claim 12, wherein the air-interface actively regulates pressure within the printing-fluid reservoir.

25. (Original) The printing-fluid container of claim 12, wherein the air-interface passively regulates pressure within the printing-fluid reservoir.

26. (Original) The printing-fluid container of claim 12, wherein the printing-fluid interface includes a ball and septum assembly.

27. (Original) The printing-fluid container of claim 12, wherein the printing-fluid interface is configured to receive a fluid connector that is in fluid communication with a printing-fluid ejector upon installation of the printing-fluid container into a printing system.

28. (Original) The printing-fluid container of claim 27, wherein the printing-fluid interface is configured to deliver printing fluid to the printing-fluid ejector via the fluid connector during the first mode of operation.

29. (Original) The printing-fluid container of claim 12, wherein the air-interface includes a ball and septum assembly.

30. (Original) The printing-fluid container of claim 12, wherein the air-interface is configured to receive a fluid connector that is in fluid communication with a venting assembly upon installation of the printing-fluid container into a printing system.

31. (Original) The printing-fluid container of claim 30, wherein the air-interface is configured to vent air to the venting assembly via the fluid connector during the second mode of operation.

32. (Original) The printing-fluid container of claim 12, wherein the printing-fluid interface and the air-interface are respectively configured to conditionally block input and output of printing fluid and air unless the printing-fluid interface is engaged by a fluid connector and the air-interface is engaged by a fluid connector.

33. (Previously Presented) A printing-fluid container, comprising:

an off-axis printing-fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein;

a ball and septum printing-fluid interface on an upright leading surface of the printing-fluid reservoir, wherein the printing-fluid interface is configured to output printing fluid from the printing-fluid reservoir during a first mode of operation and is configured to input printing fluid into the printing-fluid reservoir during a second mode of operation; and

a ball and septum air-interface vertically aligned above the printing-fluid interface on the upright leading surface of the printing-fluid reservoir, wherein the air-interface is configured to regulate pressure within the printing-fluid reservoir by inputting air into the printing-fluid reservoir during the first mode of operation and by outputting air from the printing-fluid reservoir as the printing fluid is input into the printing-fluid reservoir during the second mode of operation;

wherein the printing-fluid interface and the air-interface are configured to block input and output of printing fluid and air until the printing-fluid container is laterally installed into a printing system and a first fluid connector engages the printing-fluid interface and a second fluid connector engages the air-interface.

34. (Original) The printing fluid container of claim 33, wherein a single structural piece forms the upright leading surface of the printing-fluid reservoir.

35-37. (Canceled)

38. (Previously Presented) A method of supplying printing fluid, comprising:

storing a free volume of printing fluid and air mixed together in a reservoir having an air-interface and a printing-fluid interface;

allowing printing fluid to exit the reservoir through the printing-fluid interface and allowing air to enter the reservoir through the air-interface during a first mode of operation; and

allowing printing fluid to return to the reservoir through the printing-fluid interface and allowing air to exit the reservoir through the air-interface as the printing fluid is returned to the reservoir through the printing-fluid interface during a second mode of operation.

39. (Original) The method of claim 38, wherein allowing printing fluid to exit the reservoir includes laterally delivering printing fluid from the reservoir.

40. (Original) The method of claim 38, wherein allowing printing fluid to return to the reservoir includes laterally returning printing fluid to the reservoir.

41. (Original) The method of claim 38, allowing printing fluid to return to the reservoir includes returning printing fluid and at least one of air and froth.

APPENDIX II -- EVIDENCE SUBMITTED UNDER RULES 130, 131 OR 132

none

APPENDIX III -- RELATED PROCEEDINGS

none